What is claimed is:

1. Use of 4-hydroxyisoleucine and one or more antidiabetic agents in the manufacture of a medicament for treating diabetes, wherein the additional antidiabetic agent(s) is selected from the following types of antidiabetic agents: biguanides, sulfonylurea drugs, glinides, insulin-sensitizing agents, glucagon-like peptide 1 receptor agonists, agents that slow carbohydrate absorption, glucagon antagonists, glucokinase activators, imidazolines, glycogen phosphorylase inhibitors, oxadiazolidinediones, dipeptidyl peptidase-IV inhibitors, protein tyrosine phosphatase inhibitors, inhibitors of hepatic enzymes involved in stimulation of gluconeogenesis or glycogenolysis, glucose uptake modulators, glycogen synthase kinase-3 inhibitors, antihyperlipidemic agents, antilipidemic agents, peroxisome proliferator-activated receptor agonists, retinoid X receptor agonists, and antihypertensive agents.

2. The use of claim 1, wherein the 4-hydroxyisoleucine is the 2S,3R,4S isomer of 4-hydroxyisoleucine.

3. The use of claim 1 or 2, further comprising use of insulin in the preparation of said medicament.

4. The use of any one of claims 1 to 3, wherein the additional antidiabetic agent is a biguanide.

5. The use of claim 4, wherein the biguanide is metformin.

6. The use of any one of claims 1 to 3, wherein the additional antidiabetic agent is a sulfonylurea drug.

7. The use of any one of claims 1 to 3, wherein the additional antidiabetic agent is a glinide.

8. The use of any one of claims 1 to 3, wherein the additional antidiabetic agent is an insulin-sensitizing agent.

9. The use of claim 8, wherein the insulin-sensitizing agent is a thiazolidinedione.

10. The use of claim 9, wherein the thiazolidinedione is rosiglitazone maleate or pioglitazone.

11. The use of any one of claims 1 to 3, wherein the additional antidiabetic agent is a glucagon-like peptide 1 receptor agonist.

12. The use of claim 11, wherein the glucagon-like peptide 1 receptor agonist is Exenatide®.

13. The use of any one of claims 1 to 3, wherein the diabetes is type 2 diabetes.

14. A pharmaceutical kit comprising 4-hydroxyisoleucine and one or more antidiabetic agents selected from the following types of antidiabetic agents: biguanides, sulfonylurea drugs, glinides, insulin-sensitizing agents, glucagon-like peptide 1 receptor agonists, agents that slow carbohydrate absorption, glucagon antagonists, glucokinase activators, imidazolines, glycogen phosphorylase inhibitors, oxadiazolidinediones, dipeptidyl peptidase-IV inhibitors, protein tyrosine phosphatase inhibitors, inhibitors of hepatic enzymes involved in stimulation of gluconeogenesis or glycogenolysis, glucose uptake modulators, glycogen synthase kinase-3 inhibitors, antihyperlipidemic agents, antilipidemic agents, peroxisome proliferator-activated receptor agonists, retinoid X receptor agonists, and antihypertensive agents.

15. The pharmaceutical kit of claim 14, wherein the 4-hydroxyisoleucine is the 2S,3R,4S isomer of 4-hydroxyisoleucine.

16. The pharmaceutical kit of claim 14 or 15, wherein the kit further comprises insulin.

17. The pharmaceutical kit of any one of claims 14 to 16, wherein the additional antidiabetic agent is a biguanide.

18. The pharmaceutical kit of claim 17, wherein the biguanide is metformin.

19. The pharmaceutical kit of any one of claims 14 to 16, wherein the additional antidiabetic agent is a sulfonylurea drug.

20. The pharmaceutical kit of any one of claims 14 to 16, wherein the additional antidiabetic agent is a glinide.

21. The pharmaceutical kit of any one of claims 14 to 16, wherein the additional antidiabetic agent is an insulin-sensitizing agent.

22. The pharmaceutical kit of claim 21, wherein the additional antidiabetic agent is a thiazolidinedione.

23. The pharmaceutical kit of claim 22, wherein the thiazolidinedione is rosiglitazone maleate or pioglitazone.

24. The pharmaceutical kit of any one of claims 14 to 16, wherein the additional antidiabetic agent is a glucagon-like peptide 1 receptor agonist.

25. The pharmaceutical kit of claim 24, wherein the glucagon-like peptide 1 receptor agonist is Exenatide®.

26. The pharmaceutical kit of any one of claims 14 to 16, wherein the hydroxylated amino acid and the additional antidiabetic agent are formulated into a single composition.

27. The pharmaceutical kit of claim 26, wherein the single composition is a tablet or a capsule.

28. A pharmaceutical composition comprising 4-hydroxyisoleucine, one or more antidiabetic agents and a pharmaceutically acceptable excipient, wherein said additional antidiabetic agent(s) is selected from the following types of antidiabetic agents:

biguanides, sulfonylurea drugs, glinides, insulin-sensitizing agents, glucagon-like peptide 1 receptor agonists, agents that slow carbohydrate absorption, glucagon antagonists, glucokinase activators, imidazolines, glycogen phosphorylase inhibitors, oxadiazolidinediones, dipeptidyl peptidase-IV inhibitors, protein tyrosine phosphatase inhibitors, inhibitors of hepatic enzymes involved in stimulation of gluconeogenesis or glycogenolysis, glucose uptake modulators, glycogen synthase kinase-3 inhibitors, antihyperlipidemic agents, antilipidemic agents, peroxisome proliferator-activated receptor agonists, retinoid X receptor agonists, and antihypertensive agents.

29. Use of a pharmaceutical kit according to any one of claims 14 to 27, or of a pharmaceutical composition according to claim 28, for treating diabetes in a patient.

30. A method of treating diabetes in a patient, the method comprising administering to the patient 4-hydroxyisoleucine and one or more additional antidiabetic agents selected from the following types of antidiabetic agents: biguanides, sulfonylurea drugs, glinides, insulin-sensitizing agents, glucagon-like peptide 1 receptor agonists, agents that slow carbohydrate absorption, glucagon antagonists, glucokinase activators, imidazolines, glycogen phosphorylase inhibitors, oxadiazolidinediones, dipeptidyl peptidase-IV inhibitors, protein tyrosine phosphatase inhibitors, inhibitors of hepatic enzymes involved in stimulation of gluconeogenesis or glycogenolysis, glucose uptake modulators, glycogen synthase kinase-3 inhibitors, antihyperlipidemic agents, antilipidemic agents, peroxisome proliferator-activated receptor agonists, retinoid X receptor agonists, and antihypertensive agents.

31. The method of claim 30, wherein the 4-hydroxyisoleucine is the 2S,3R,4S isomer of 4-hydroxyisoleucine.

32. The method of claim 30, further comprising administering insulin to the patient.

33. The method of claim 30, wherein the additional antidiabetic agent is a biguanide.

34. The method of claim 33, wherein the biguanide is metformin.

35. The method of claim 30, wherein the additional antidiabetic agent is a sulfonylurea drug.

36. The method of claim 30, wherein the additional antidiabetic agent is a glinide.

37. The method of claim 30, wherein the additional antidiabetic agent is an insulin-sensitizing agent.

38. The method of claim 37, wherein the insulin-sensitizing agent is a thiazolidinedione.

39. The method of claim 38, wherein the thiazolidinedione is rosiglitazone maleate or pioglitazone.

40. The method of claim 30, wherein the additional antidiabetic agent is a glucagon-like peptide 1 receptor agonist.

41. The method of claim 40, wherein the glucagon-like peptide 1 receptor agonist is Exenatide®.

42. The method of claim 30, wherein the diabetes is type 2 diabetes.

43. The method of claim 30, wherein the hydroxylated amino acid is administered to the patient at or about the same time as the additional antidiabetic agent.